

# Pertussis Laboratory Testing Guidelines

**Polymerase chain reaction (PCR)** for clinically compatible illness is the preferred diagnostic test for pertussis. Although formerly the gold standard for pertussis diagnosis, culture has a low sensitivity, and fastidious growth requirements make *Bordetella pertussis* difficult to isolate. Commercial serological tests are not standardized and lack appropriate sensitivity and specificity. Laboratory confirmation of pertussis is important to confirm disease, identify infection in vaccinated individuals, confirm outbreaks, and establish a cause of death.

For a best practices guide on using PCR to diagnose pertussis, visit [cdc.gov/pertussis/clinical/diagnostic-testing/diagnosis-pcr-bestpractices.html](https://www.cdc.gov/pertussis/clinical/diagnostic-testing/diagnosis-pcr-bestpractices.html).

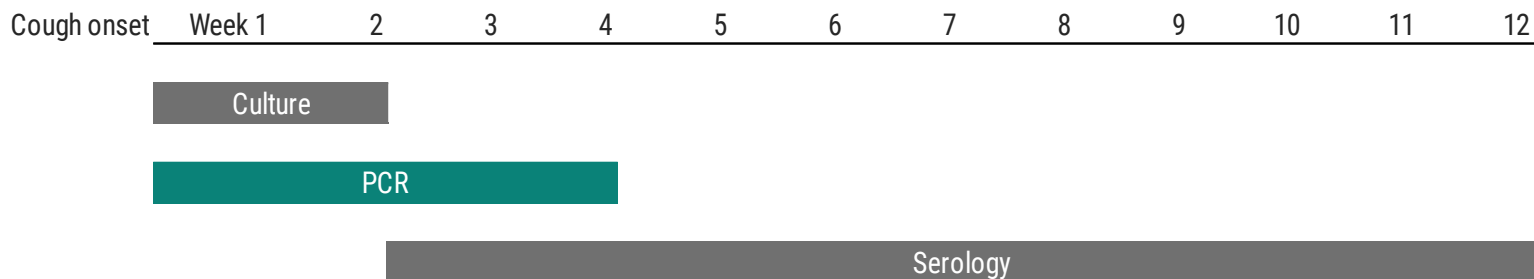
## Specimen Collection and Handling

A nasopharyngeal (NP) aspirate or NP swab (not throat or anterior nasal swab) obtained using a polyester, rayon, or nylon swab (not a cotton or calcium alginate swab) is the preferred specimen for pertussis PCR testing. NP aspirates should be stored and shipped in a sterile vial at room or refrigerated temperature. NP swabs should be stored and shipped dry in a plastic transport tube at room or refrigerated temperature.

For videos on how to collect an NP aspirate or swab, visit [cdc.gov/pertussis/clinical/diagnostic-testing/specimen-collection.html](https://www.cdc.gov/pertussis/clinical/diagnostic-testing/specimen-collection.html).

## Testing Timeline

Specimens for PCR testing should be collected within 4 weeks of cough onset.



## Ordering Testing

Pertussis PCR is available at commercial laboratories as well as at many hospital laboratories. Please do not send specimens to public health laboratories for routine pertussis testing.

## Summary of Pertussis Diagnostic Tests

Test Type	Specimen	Optimal Timing	Strengths	Weaknesses
PCR	Nasopharyngeal aspirate or swab	<3 weeks post cough onset (can be performed up to 4 weeks)	Rapid test; high sensitivity; does not require viable bacteria in the specimen	No standardization; potential for false positives; DNA cross-contamination from vaccines can be problematic
Culture	Nasopharyngeal aspirate or swab	<2 weeks post cough onset	100% specific	Low sensitivity; may take up to 2 weeks for results; not widely available; not useful for vaccinated patients or those who have started antibiotics
Serology	Serum	2–8 weeks post cough onset (can be performed up to 12 weeks)	Useful for diagnosis late in illness or for patients who have started antibiotics	No U.S. Food and Drug Administration-approved test or standardization; possibly confounded by recent vaccination; diagnostic cut-offs not validated; low specificity and sensitivity

For information on pertussis surveillance, visit [FloridaHealth.gov/Pertussis](https://www.FloridaHealth.gov/Pertussis). For additional questions, please contact your local county health department.

